Victoria Shanghai Academy

Year 6 (MYP 1)

Mathematics

Decimals

Name: _____

Class: _____ ( )

Decimal fractions – tenths, hundredths and thousandths

Common fractions and decimal fractions are related as they both show parts of a whole. In common fractions, we divide a whole into parts such as halves or sixths.

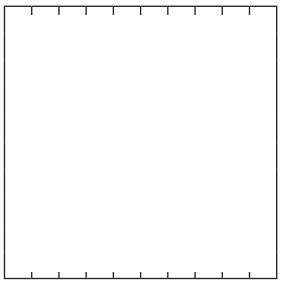
In decimal fractions, the whole is partitioned using the base 10 system – into tenths, then hundredths, then thousandths and so on.

We use a decimal point after the unit to indicate the end of whole numbers: 6.42

If the number has no whole numbers, we use a zero to make sure we don't miss the decimal point: 0.42

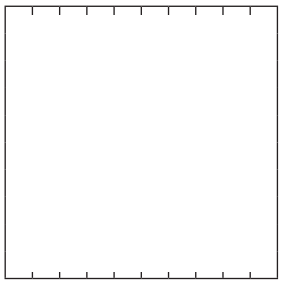
1 **Divide these wholes into tenths and shade the specified amounts. Write each as a decimal fraction:**

a



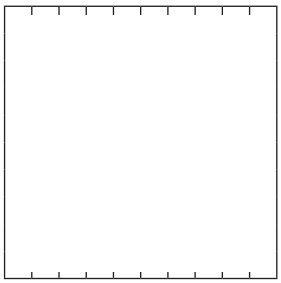
$\frac{4}{10}$ 0 •

b



$\frac{9}{10}$ •

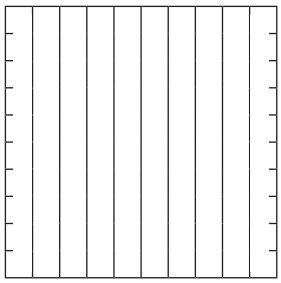
c



$\frac{10}{10}$ •

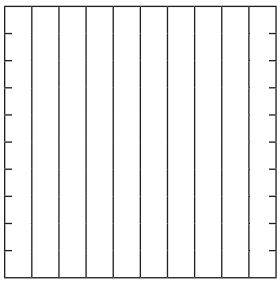
2 **Now divide these wholes into hundredths and shade the specified amounts. Write each as a decimal fraction:**

a



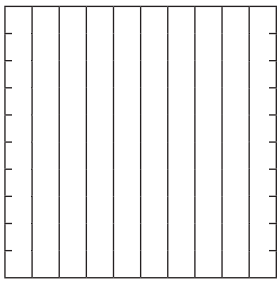
$\frac{61}{100}$ 0 •

b



$\frac{80}{100}$ 0 •

c



$\frac{55}{100}$ 0 •

3 **Express these as decimal fractions:**

a 6 tenths, 7 hundredths, 4 thousandths 0 •

b $\frac{432}{1000}$ 0 •

c 4 tenths, 9 hundredths, 3 thousandths 0 •

d $\frac{589}{1000}$ 0 •

e 0 tenths, 2 hundredths, 9 thousandths 0 •

f $\frac{7}{1000}$ 0 •

g 4 thousandths 0 •

h $\frac{1000}{1000}$ •

Decimal fractions – reading and writing decimals

When we write decimals we follow this place order:

Thousands	Hundreds	Tens	Units	Tenths	Hundredths	Thousandths
			2 •	2	5	6

Numbers **before** the decimal point are whole numbers.

Numbers **after** the decimal point are parts of a whole number.

The further the digit is to the left in the number, the greater its value. The further it is to the right, the smaller its value.

1 **What is the value of the digit in bold? Tick the correct column:**

	Thousands	Hundreds	Tens	Units	Tenths	Hundredths	Thousandths
a 5.8**9**2				•			
b 13.0**5**				•			
c **7**63.22				•			
d 8**9**.021				•			
e 100.00**1**				•			
f 560.**4**5				•			
g 3**1**2.956				•			

2 **Read each number and write it as a decimal:**

a four units, one hundred and twenty two thousandths _____

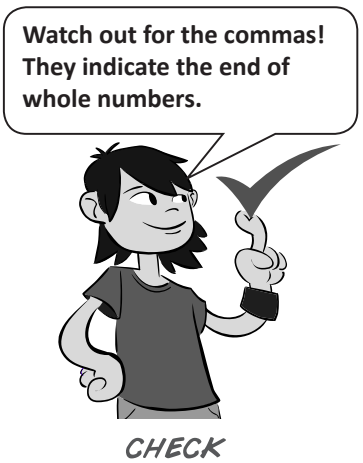
b one hundred and eleven, and sixty five hundredths _____

c three hundred, and forty two thousandths _____

d four thousand, and twelve hundredths _____

e twelve, and 13 thousandths _____

f two hundred and thirteen, and forty-three hundredths _____



3 **These answers are all close but incorrect. Write the correct answers:**

a twenty seven tenths is written as 0.27 No it's not, it's written as _____

b forty eight hundredths is written as 0.048 No it's not, it's written as _____

c 9000 thousandths is written as 0.009 No it's not, it's written as _____

d eleven and 12 hundredths is written as 11.012 No it's not, it's written as _____

e 167 hundredths is written as 16.7 No it's not, it's written as _____

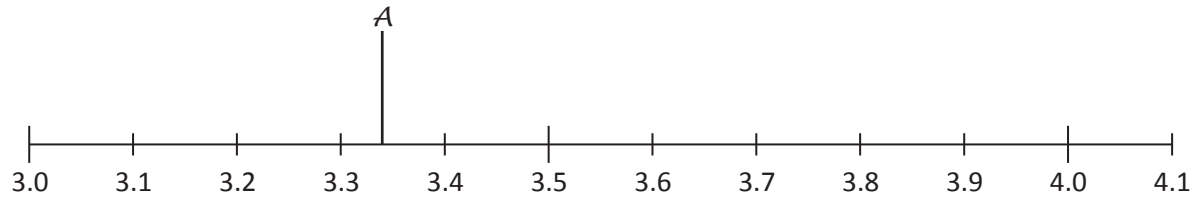
Decimal fractions – comparing and ordering decimals

We need to carefully consider the place value of digits when ordering and comparing decimals.

	Name	Distance
A	Spitter Macgee	3.34 m
B	Did You See That One Big-noter	3.1 m
C	Secret-ingredient Spitski	3.15 m
D	Dead-eye Jones	3.63 m
E	The Long Distance Shooter	4.01 m
F	Sally Straw	3.36 m
G	Technique Tezza	3.96 m
H	Lone Shooter	4.04 m
I	Double Or Nothing Danielle	4.05 m
J	Shoot Dog	3.94 m

1 **6A has a very cool teacher who decides to harness, not ban, the class' current obsession with pea shooting. After a week of intense training, a shoot-off occurs. The results for the top ten shooters are tabled on the right.**

Place the students on the number line. The first one has been done for you.



2 **Use the above information to answer the following questions:**

a Who shot the furthest on the day? _____

b Whose shot was the shortest? _____

c Which students' shots were 1 hundredth of a metre apart?

_____

d What was the difference between the shots of Shoot Dog and Spitter Macgee? _____

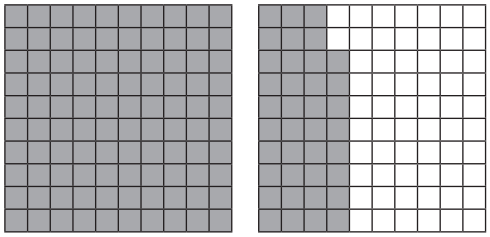
e Do you think you could beat this? Something to try at home perhaps? Even 6A's teacher eventually had enough of the pea shooting.

Decimal fractions – renaming decimals

We can express the same decimal fraction in different ways.

This shows 138 hundredths.

We can also express this as 1 unit, 3 tenths and 8 hundredths ***or*** 13 tenths and 8 hundredths ***or*** 1 unit and 38 hundredths.



1 **Rename these fractions:**

a 37 hundredths is also ☐ tenths + ☐ hundredths

b 53 hundredths is also ☐ tenths + ☐ hundredths

c 99 hundredths is also ☐ tenths + ☐ hundredths

d 6 tenths and 3 hundredths is also ☐ hundredths

e 4 tenths and 9 hundredths is also ☐ hundredths

f 4 tenths, 9 hundredths and 8 thousandths is also ☐ thousandths

g 0 tenths, 5 hundredths and 8 thousandths is also ☐ thousandths

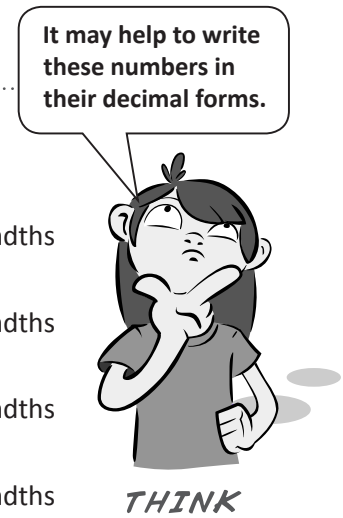
2 **Now try these. Fill in the missing information:**

a 4 units = 40 tenths = 400 hundredths = _____ thousandths

b _____ units = 70 tenths = _____ hundredths = _____ thousandths

c 2.5 units = _____ tenths = 250 hundredths = _____ thousandths

d _____ units = _____ tenths = 900 hundredths = _____ thousandths



3 **Rename these numbers as many ways as you can. Use the abbreviation: H for hundredths, T for tenths and U for units:**

5.67	**2.52**	**9.81**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Decimal fractions – rounding

We often round decimals to a particular place value. We do this to make the numbers easier to work with.

Look at 2.685. We can round this to the nearest whole number, tenth or hundredth.

Let's round it to the nearest tenth. To do this, we look at the number in the hundredths place. This is 8, which is closer to 10 than 1, so we round the tenth up. The rounded number is now 2.7

1 **Round these numbers to the nearest tenth:**

a 67.23 _____ **b** 48.07 _____

c 124.78 _____ **d** 90.14 _____

e 54.53 _____ **f** 7.06 _____

2 **Now round these numbers to the nearest hundredth:**

a 58.127 _____ **b** 70.345 _____

c 45.007 _____ **d** 78.134 _____

e 89.036 _____ **f** 36.231 _____

3 **Use a calculator to perform the following operations. Round the answers to the nearest tenth:**

a 132.4 ÷ 5 = _____ **b** 178 ÷ 8 = _____ **c** 125.3 ÷ 4 = _____

d 223 ÷ 4 = _____ **e** 12 ÷ 7 = _____ **f** 123.52 ÷ 4 = _____

4 **Look at the following meal options.**

a Round each price to the nearest dollar and total the estimated cost of each option below:

Choice 1		
Hamburger	$4.95	
Can of drink	$2.25	
Large chips	$1.15	
Total		

Choice 2		
Noodles with prawns	$7.95	
Green tea	$0.95	
3 Crab cakes	$2.98	
Total		

Choice 3		
Salad roll	$5.15	
Juice	$2.25	
Cookie	$1.95	
Total		

b You have $10. Circle the choices you can afford.

EXERCISE 9A — PLACE VALUE TABLES

a

Number	thousands	hundreds	tens	units		tenths	hundredths	thousandths	*Written Numeral*
$\frac{8}{10} + \frac{3}{100}$					.				

b

Number	thousands	hundreds	tens	units		tenths	hundredths	thousandths	*Written Numeral*
$4 + \frac{1}{10} + \frac{2}{100} + \frac{8}{1000}$					.				

c

Number	thousands	hundreds	tens	units		tenths	hundredths	thousandths	*Written Numeral*
$9 + \frac{4}{1000}$					.				

d

Number	thousands	hundreds	tens	units		tenths	hundredths	thousandths	*Written Numeral*
$\frac{5}{100} + \frac{6}{1000}$					.				

e

Number	thousands	hundreds	tens	units		tenths	hundredths	thousandths	*Written Numeral*
$28 + \frac{6}{10} + \frac{9}{100} + \frac{9}{1000}$					.				

f

Number	thousands	hundreds	tens	units		tenths	hundredths	thousandths	*Written Numeral*
$139 + \frac{7}{100} + \frac{7}{1000}$					.				

Place value table
Common mistakes (Year 6)

Circle the mistakes and write the correct answers

3050.057 – One thousand and fofty seven thouanths

4070.107 – four zero seven zero one zero seven

2050.509 – two zero five zero five zero seven

3040.057 – three thousands and fifty and fifty svenen thousandths

2050.509 – two thousands and fifity and five hunder and nine

2040.201 – two thousand and fourty and two hunder and one thousanths

1031.301 – one thousand and trity one and three hunder and one thousandths

2050.509 – two thousand and fity five hundreds and nine thousands

1030. 052 – one thousand and thirty and fify tow thousand
1030.052 – one thousand and thirty and fivty two thosanths

3050.057 – three thsnds nd fivety and fivety seven thousandths

800.038 – eight hungreds and threethy eight thousandths

13.908 – thirteen and nine hundreths and eight thousandths

20.708 – twenty and seven hundredth and eight thousandths

2.4 Approximations

2.4.1 Rounding Off to a Specified Number of Decimal Places

We have learned how to express fractions in two types of decimals.

E.g. $\frac{2}{5} = 0.4$ (terminating decimal)

$\frac{1}{3} = 0.333\ 333\ 333...$

$= 0.\dot{3}$ (non-terminating and recurring decimal)

note

A decimal that has a finite number of digits is called a **terminating decimal**. A decimal that goes on forever is called a **non-terminating decimal**.

We have also learned about real numbers that are not rational numbers such as $\sqrt{2}$ and π. By using a calculator, we can also express these real numbers as decimals that are neither terminating nor recurring.

E.g $\sqrt{2} = 1.414\ 213\ 562...$ (non-terminating and non-recurring decimal)

$\pi = 3.141\ 592\ 653...$ (non-terminating and non-recurring decimal)

Unlike terminating decimals and recurring decimals, it is impossible to show all the digits of non-recurring decimals. Therefore, we have to decide how many digits we want to show. We also face this problem if we have a decimal with more decimal places than we require.

note

The number of decimal places corresponds to its number of digits after the decimal point. For example, 0.56 has 2 decimal places and 32.487 has 3 decimal places.

To solve this problem, we introduce a rule called **rounding off**. Using this rule, we can round off decimals to a specified number of decimal places. In this process, we are actually approximating the value of the decimals.

Let us take a look at the following examples to illustrate how we can apply this rule.

Example 26

(a) Round off the following decimals to 1 decimal place.

(i) 6.73 **(ii)** 12.48 **(iii)** 0.55

(b) Round off the following decimals to 2 decimal places.

(i) 6.486 **(ii)** 3.781 6

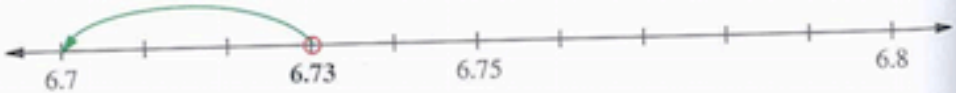
note

When **rounding off a number to 1 decimal place**, we look at the digit in the 2nd decimal place.

1. Round down the number if the digit is less than 5.
2. Round up the number if the digit is greater than or equal to 5.

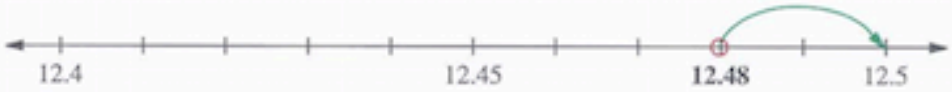
Solution

(a) **(i)** 6.73 is between 6.7 and 6.8.



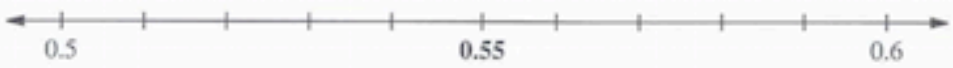
6.73 is nearer to 6.7, therefore 6.73 = 6.7 (correct to 1 decimal place).

(ii) 12.48 is between 12.4 and 12.5.



12.48 is nearer to 12.5, therefore 12.48 = 12.5 (correct to 1 decimal place).

(iii) 0.55 is between 0.5 and 0.6.



0.55 is equally far from 0.5 and 0.6. In this case, the convention is to use the larger number, therefore 0.55 = 0.6 (correct to 1 decimal place).

note

When **rounding off a number to 2 decimal places**, we look at the digit in the 3rd decimal place.

1. Round down the number if the digit is less than 5.
2. Round up the number if the digit is greater than or equal to 5.

(b) (i) 6.486 is between 6.48 and 6.49.

6.486 is nearer to 6.49, therefore 6.486 = 6.49 (correct to 2 decimal places).

(ii) 3.781 6 is between 3.78 and 3.79.

3.781 6 is nearer to 3.78, therefore 3.781 6 = 3.78 (correct to 2 decimal places).

To round off a decimal, we look at the digit on the right of the place value that is to be rounded off. Let us take a look at some examples.

Example 27

Express 14.838 5 correct to

(a) 1 decimal place, (b) 3 decimal places.

Solution

14.83 is nearer to 14.8 than to 14.9.

(a) 14.838 5

∴ 14.838 5 = 14.8 (correct to 1 dec. pl.)

14.838 **5** is midway between 14.838 and 14.839. By convention, we round up to 14.839.

(b) 14.838 5

3 decimal places

$\therefore$ 14.838 5 = 14.839 (correct to 3 dec. pl.)

Example 28

Calculate the following and express the answers correct to 2 decimal places.

(a) $3.04 \div 0.7$ **(b)** $2.3 \div 0.3$

note

'dec. pl.' can be used as the short form of 'decimal place(s)'.

Solution

(a) $3.04 \div 0.7$
$= 30.4 \div 7$
$= 4.34$ (correct to 2 dec. pl.)

(a) Using a calculator,
$3.04 \div 0.7$
$= 4.342\ 857\ 143$
$= 4.34$ (correct to 2 dec. pl.)

$$
\begin{array}{r}
4.342 \\
7\overline{)\,30.400} \\
-\ 28 \\
\hline
24 \\
-\ 21 \\
\hline
30 \\
-\ 28 \\
\hline
20 \\
-\ 14 \\
\hline
6
\end{array}
$$

← Stop dividing after 3 decimal places (i.e. 1 place more than required)

(b) $2.3 \div 0.3$
$= 23 \div 3$
$= 7.67$ (correct to 2 dec. pl.)

$$
\begin{array}{r}
7.666 \\
3\overline{)\,23.000} \\
-\ 21 \\
\hline
20 \\
-\ 18 \\
\hline
20 \\
-\ 18 \\
\hline
20 \\
-\ 18 \\
\hline
2
\end{array}
$$

← Stop dividing after 3 decimal places

In previous examples, you have come across **rounding off** numbers to the required number of decimal places. However, if we approximate \$2.90 to \$3, we say that \$2.90 is rounded off to the nearest dollar. When we say 'his mass is 50 kg', we usually mean his mass is 50 kg correct to the nearest kilogram.

Example 29

(a) Round off 2 456
- **(i)** to the nearest ten,
- **(ii)** to the nearest hundred,
- **(iii)** to the nearest thousand.

(b) Round off 245 to the nearest ten.

(c) Round off 245.6 to the nearest whole number.

Solution

(a) (i) 2 456 is nearer to 2 460 than to 2 450.
$\therefore$ 2 456 = 2 460 (correct to the nearest ten)

(ii) 2 456 is nearer to 2 500 than to 2 400.
$\therefore$ 2 456 = 2 500 (correct to the nearest hundred)

(iii) 2 456 is nearer to 2 000 than to 3 000.
$\therefore$ 2 456 = 2 000 (correct to the nearest thousand)

(b) 245 is exactly between 240 and 250. By convention, we round off to the larger value.
$\therefore$ 245 = 250 (correct to the nearest ten)

(c) 245.6 is nearer to 246 than to 245.
$\therefore$ 245.6 = 246 (correct to the nearest whole number)

Exercise 2E

1. Express the following decimals correct to 2 decimal places.

(a)	4.834	(b)	1.641
(c)	6.978	(d)	2.887
(e)	14.055	(f)	28.065
(g)	4.831 9	(h)	17.041 3
(i)	0.989 32	(j)	0.276 42

2. Round off the following decimals to the number of decimal places indicated in the brackets.

(a)	4.87	(1)	(b)	12.843	(2)
(c)	0.047 5	(3)	(d)	0.940 8	(3)
(e)	3.863	(1)	(f)	24.938	(1)
(g)	7.932 7	(2)	(h)	14.833 33	(2)

3. Find the decimal values of the following fractions correct to 3 decimal places.

(a)	$\frac{1}{9}$	(b)	$\frac{1}{6}$	(c)	$\frac{1}{7}$
(d)	$\frac{1}{11}$	(e)	$\frac{1}{15}$	(f)	$\frac{1}{12}$
(g)	$\frac{1}{22}$	(h)	$\frac{1}{41}$	(i)	$\frac{1}{105}$

4. Calculate the following correct to 3 decimal places.

(a)	0.47 ÷ 0.3	(b)	0.83 ÷ 0.6
(c)	0.068 ÷ 0.07	(d)	0.082 ÷ 0.03
(e)	0.53 ÷ 0.006	(f)	0.29 ÷ 0.007
(g)	3.61 ÷ 1.1	(h)	7.58 ÷ 1.2
(i)	6.56 ÷ 0.09	(j)	7.91 ÷ 0.09

5. Round off 1 638.5 to the nearest

(a)	whole number,	(b)	ten,
(c)	hundred,	(d)	thousand.

6. Round off the following to

(a) 1 decimal place,
(b) nearest whole number,
(c) nearest ten.

(i)	73.064 5	(ii)	17.041 3
(iii)	7.084 2	(iv)	6.79
(v)	24.938	(vi)	34.983
(vii)	104.86	(viii)	213.57
(ix)	199.54	(x)	299.66

7. Round off the following to

(a) 1 decimal place,

(b) the nearest cm.

(i) 0.76 cm	**(ii)** 1.27 cm
(iii) 12.34 cm	**(iv)** 45.67 cm
(v) 89.01 cm	**(vi)** 90.12 cm
(vii) 112.35 cm	**(viii)** 358.01 cm

8. Round off the following to the nearest

(a) 10 g, **(b)** 100 g.

(i) 112 g	**(ii)** 123 g
(iii) 235 g	**(iv)** 358 g
(v) 5 813 g	**(vi)** 81 321 g
(vii) 1 304 g	**(viii)** 2 001 g

9. Express 0.085 714 correct to 3 decimal places. [N/96/P1]

10. The attendance at a football match was 23 749. Write 23 749 correct to the nearest hundred. [N/02/P1]

11. Express 776 813 correct to the nearest thousand. [N/03/P1]

2.4.2 Rounding Off to a Specified Number of Significant Figures

Let us consider the following calculation.

$$0.743\,43 \div 3\,000 = 0.000\,247\,81$$

If the answer is rounded off to 3 decimal places, we get:

$$0.000\,247\,81 = 0.000 = 0$$

This value is not useful for calculations as we want to keep the digits that are important or significant. In order to overcome this problem, we introduce the concept of rounding off according to **significant figures** instead of decimal places.

When correcting to a certain number of decimal places, we start counting from the first number after the decimal point. However, when correcting to a certain number of significant figures, we start counting from the **first non-zero digit**. For example, the first three significant figures in the following two numbers are circled as shown.

(564) 357.48 and 0.000 (247) 81

Make sure that the place value of each significant figure is unaltered when we round off. So,

less than 5

564 357.48 = 564 000 (correct to 3 significant figures)

0.000 247 81 = 0.000 248 (correct to 3 significant figures)

greater than 5

note

When **rounding off a number to 3 significant figures**, we look at the 4th significant figure.

1. Round down the number if the figure is less than 5.
2. Round up the number if the figure is greater than or equal to 5.

Example 30

The population of the U.S.A. in the 2000 census was found to be 283 182 179. Write this number correct to 2 significant figures.

The place value of the significant figures must be unaltered. An answer of 28 would be ridiculous!

Solution

less than 5

283 182 179 = 280 000 000 (correct to 2 sig. fig.)

note

'sig. fig.' can be used as the short form of 'significant figure(s)'.

Example 31

Find the decimal value of $\frac{1}{1.2}$. Give your answer correct to 3 significant figures.

Solution

$$\frac{1 \times 10}{1.2 \times 10} = \frac{10}{12}$$

$= 0.833$ (correct to 3 sig. fig.)

$$12\overline{)10.0000} = 0.8333$$

-96

40

-36

40

-36

40

-36

4

Alternatively:

$$\frac{1}{1.2} = \frac{1}{\frac{12}{10}}$$

$$= 1 \times \frac{10}{12}$$

$$= \frac{10}{12}$$

Rules for Determining Number of Significant Figures

1. All non-zero digits are significant whenever they are written down.

   E.g. 1.23 has 3 significant figures.

2. Zeros that lie between non-zero digits are significant.

   E.g. 20.01 has 4 significant figures.

3. Zeros which are not preceded by non-zero digits are **not** significant.

   E.g. 0.001 2 has 2 significant figures.

4. The final zeros which appear after the decimal points are significant.

   E.g. 1.00 has 3 significant figures.
   4.50 has 3 significant figures.
   0.10 has 2 significant figures.

5. The zeros in whole numbers may or may not be significant, depending on the estimations made.

   E.g. 2 001 = 2 000 (correct to 3 sig. fig.)
   2 001 = 2 000 (correct to 2 sig. fig.)
   2 001 = 2 000 (correct to 1 sig. fig.)

Exercise 2F

1. Express the following numbers correct to 3 significant figures.
   (a) 2 732
   (b) 3 059
   (c) 0.012 43
   (d) 0.031 58
   (e) 42 617
   (f) 86 279
   (g) 239 821
   (h) 1 097 288
   (i) 0.007 008 3
   (j) 0.000 496 81

2. The population of France in 2006 was 63 587 700. Give this answer correct to:
   (a) 3 significant figures,
   (b) 2 significant figures.

3. Express the following correct to 2 significant figures.
   (a) 0.048 62 [N/98/P1]
   (b) 0.030 69 [N/99/P1]
   (c) 13 784 [N/00/P1]
   (d) 0.077 6 [N/04/P1]

4. The attendance at a football match was 14 725. Write 14 725 correct to
   (a) the nearest thousand,
   (b) 3 significant figures. [N/97/P1]

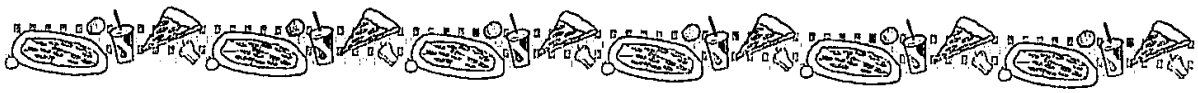
5. Find the decimal values (correct to 3 significant figures) of the following.
   (a) $\frac{1}{2.51}$ (b) $\frac{1}{1.62}$
   (c) $\frac{1}{1.55}$ (d) $\frac{1}{2.47}$
   (e) $\frac{1}{0.55}$ (f) $\frac{1}{0.82}$

Revision on Decimals

1. **3.56 + 6.7 =**
2. **4.7 – 1.9 =**
3. **7.9 + 9.81 =**
4. **9.87 – 5.89 =**
5. **2.5 x 6 =**
6. **9.8 x 1.23 =**
7. **2.2 + 6.9 =**
8. **80.1 – 2.9 =**
9. **3.3 x 5.5 =**
10. **2.99 + 6. 15 =**

Division of decimals - Exercise 1

1. 15.6 ÷ 4
2. 6.3 ÷ 7
3. 6.6 ÷ 5
4. 36 ÷ 50
5. 100 ÷ 40
6. 1 ÷ 20
7. Mum spent $37.20 on 3 kg of sweets. How much did each kilogram of sweets cost?
8. Lily divided 1.8 L of ice cream into 12 cups equally. How many litres of ice cream did each cup contain?
9. 5 pencils can be bought with $4. How much does each pencil cost?
10. 32 dumplings weigh 328g. How much grams does each dumpling weigh on average?



Division of decimals - Exercise 3

For Q1 to Q4, round off the answers to the nearest tenth.

1. $0.4 \div 2.3$
2. $3.33 \div 1.1$
3. $30 \div 7$
4. $1 \div 6$

5. Kevin has $2.70. If he divides the amount into groups of $0.50, how many groups are there? How much money has he left?
6. Each picture card costs $4.50. If Kate has $40, how many picture cards can he buy? How much money has she left?
7. A toy car costs $48.50. If Kevin saves $3.50 each day, how many days does he need to save enough money to buy the toy car? After buying it, how much money has he left?
8. David has a stick that is 5.65m long. If he divides it into sections of 0.25m, how many sections are there? How many metres of the stick has he left over?
9. If Tom divides 10.5kg of sugar into packets of 0.45kg, how many packets of sugar are there? How many kilograms of sugar has he left over?

Mixed operations of decimals - Exercise 4

1. 3 packets of steak weigh 12.6 kg. How many kilograms do 7 packets of steak weigh?
2. There are 80 bottles of honey. Each bottle contains 0.5 L of honey. If we pour the honey into jars of 1.25 L, how many jars of honey are there?
3. 0.8 kg of fish balls can be bought with 48.60. If Mum buys 3.6 kg, how much should she pay?
4. There are 4 packets of pork chops. Each packet weighs 1.75 kg. They are put into 20 boxes equally. How many kilograms of pork chops does each box contain?
5. A dozen chicken wings cost $43.20. If Mum buys 8 chicken wings, how much should she pay?
6. The price of 3.2 kg of melons is the same as the price of 5 kg of pumpkins. If each kilogram of pumpkins costs 44.80, how much does each kilogram of melons cost?
7. Jenny spent $34.40 on a fish which weighed 0.8 kg. David bought a fish which weighed 0.6 kg. How much did David pay?

Mixed operations of decimals – Exercise 5

Solve the following problems
(Show horizontal form, column form, proper units and answer in full sentence for word problems)

1. $7.8 + 3.7 \times 2.9$

2. $12.6 - 17.6 \div 2.2$

3. $1.8 + 10.3 \times 0.5 - 2.38$

4. $3.6 \times 8 - 5.4 \div 5$

5. Kate had $87.40. After spending $12.50 each day for 3 days, she donated the remaining money to charity. How much money did she donate?

6. Each can of apple juice cost $4.80. Kevin bought 6 cans of apple juice. He has $2.30 left. How much money did he have originally?

7. A hawker bought some oranges at $1.20 each. He sold them at $10 for 4 oranges. If Mrs. Cheung bought a dozen oranges, how much did the hawker earn?

8. The capacity f a can of green tea is 0.34L. The capacity of a can of lemon tea is the same as that of the green tea. Each can of green tea costs $7. Each can of lemon tea costs $6.20. How much more expensive is 1L of green tea than 1L of lemon tea? (Round off the answer to the nearest tenth.)

Decimals

Today's task:

You are going to make a budget for your class party. Each of your classmates will contribute $20. Refer to the online Park'n Shop catalogues for reference.

You need to draft a budget in your Math Journal, including:
1. Title
2. Total amount of money you can use
3. What items you will buy
4. The price of each item you will buy
5. Total cost of all the items you will buy
6. The amount of money that is left over
7. The amount of money each of your classmates will get back from the left over amount

Make sure your presentation is clear and in an organized way.

Name: _____( ) Class: _____ Date: _____

Fractions and Decimals

Activity 1

Convert $\frac{19}{25}$, $\frac{31}{40}$, $\frac{27}{500}$ into decimals. (Hint: Change the denominators into base 10, i.e. 100, 1000, 10000 etc)

Solution:

$\frac{19}{25}=\frac{19\times(\ \ )}{25\times(\ \ )}=\frac{(\ \ )}{100}=$( )

$\frac{27}{500}=\frac{27\times(\ \ )}{500\times(\ \ )}=\frac{(\ \ )}{(\ \ )}=$( )

$\frac{31}{40}=\frac{31\times(\ \ )}{40\times(\ \ )}=\frac{(\ \ )}{1000}=$( )

Activity 2

Convert $\frac{17}{32}$, $\frac{11}{80}$, $\frac{107}{125}$ into decimals.

Solution (show your working):

$\frac{17}{32}=$

$\frac{11}{80}=$

$\frac{107}{125}=$

Think:

How do I know which number may have a multiple of a base 10 (i.e. 100, 1000, 10000 etc)?

What factors must that number have?

My observations and conclusions:

_____

_____

_____

Name: _____( ) Class: _____ Date: _____

Activity 3

Convert $\frac{8}{9}$, $\frac{13}{33}$, $\frac{11}{37}$ into recurring decimals. (Hint: divide the numerator by the demoniator)

Solution (show your working):

$\frac{8}{9}=8\div 9=0.888\ldots=0.\dot{8}$

$\frac{11}{37}=$

$\frac{13}{33}=$

Activity 4

Convert 0.25, 0.125 and 0.87 into fractions.

Solution (show your working):

$0.25=\frac{25}{100}=\frac{(\quad)}{(\quad)}$

$0.125=\frac{125}{(\quad)}=\frac{(\quad)}{(\quad)}$

$0.87=\frac{(\quad)}{(\quad)}$

Activity 5

Convert $0.\dot{2}\dot{7}$ into fractions.

Solution (show your working):

$0.\dot{2}\dot{7}\times 100=27.2727\ldots$ (1)

$0.\dot{2}\dot{7}=0.2727\ldots$ (2)

(1)−(2)

$0.\dot{2}\dot{7}\times 100-0.\dot{2}\dot{7}=27.2727\ldots-0.2727\ldots$

$0.\dot{2}\dot{7}\times(100-1)=27$

$0.\dot{2}\dot{7}\times 99=27$

$0.\dot{2}\dot{7}=\frac{(\ 27\ )}{(\ 99\ )}=\frac{(\quad)}{(\quad)}$

Now, convert $1.\dot{0}8\dot{1}$ into fraction using similar method as above.